National Web-Based Teleconference on Health IT: Putting the Patient Back in Patient-Centered Care

March 30, 2011

Moderator:
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Agency for Healthcare Research and Quality

Presenters:
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Silka von Esenwein
Managing Health: EMPOWERing Patients

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Stanford University School of Medicine

I do not have any relevant financial relationships with any commercial interests to disclose.
Agenda

• Traditional disease management
• Personalized health care
• EMPOWER-D study
Traditional Disease Management

“Protocol Driven”

Disease Condition

Treatment
Personalizing Health

Role for a Personalized Health Record
Personalize your health records

What do you want your doctor to know about you?
Missed opportunity: teachable moment. A chance to cure.

1. If I do all the right things could I reverse the diagnosis?
3

I would like to be healthy enough to give my daughter a kidney—she is in kidney failure.
Health goal

5 I want to live to be 90.
Personalized Health Care Program (PHCP)

A Personalized Care Management Service

• Provide customized online care management support of patients with chronic health conditions

• Partnership between patients and their multidisciplinary health care team
PHCP
Conceptual Architecture

EHR
Patient-specific Clinical Information

Reasoning Engine

PHR
Personalized Care Plan And Feedback

Best Practice Management Advice
PAMFOnline: Diabetes Status Report
Diabetes Dashboard for Patients

DM Status Report

**Diabetes Status Report for Bob Rcttest**
Please click here to communicate any concerns or issues to your Diabetes Care Coordinator Team.

**Onset Year: 2006**

**Your Action Plans**
Live to be 90!
Remember to eat 5-9 servings of fruits and vegetables per day!
*****will eat 30-60 grams of carbohydrate per meal (2/14/08-2/21/08)
*****will walk 30 minutes, 5 days a week (2/14/08-2/28/08)

**Personalized Estimate of 10-year risks**
- Amputation (4%)
- Heart Attack (39%)
- Kidney Failure (11%)
- Stroke (14%)
- Vision Loss (11%)

**Recent diabetes related lab values**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Reference Date</th>
<th>Value</th>
<th>Plot</th>
<th>more info</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blood Pressure &lt;130/80</td>
<td>02/22/2008</td>
<td>132/88</td>
<td></td>
<td>more info</td>
</tr>
<tr>
<td>Weight</td>
<td>02/22/2008</td>
<td>232 lb (105.23 kg)</td>
<td></td>
<td>more info</td>
</tr>
<tr>
<td>Body Mass Index &lt;25</td>
<td>01/30/2008</td>
<td>35.28 kg/m2</td>
<td></td>
<td>more info</td>
</tr>
<tr>
<td>Glycohemoglobin &lt;6.5 - HgA1c 7.0</td>
<td>01/30/2008</td>
<td>7.4</td>
<td></td>
<td>more info</td>
</tr>
<tr>
<td>Glucose 90-160</td>
<td>02/01/2007</td>
<td>198</td>
<td></td>
<td>more info</td>
</tr>
<tr>
<td>Glucose Fasting 90-110</td>
<td>02/05/2008</td>
<td>125</td>
<td></td>
<td>more info</td>
</tr>
<tr>
<td>LDL &lt;100</td>
<td>02/14/2008</td>
<td>165</td>
<td></td>
<td>more info</td>
</tr>
<tr>
<td>Triglyceride</td>
<td>02/14/2008</td>
<td>155</td>
<td></td>
<td>more info</td>
</tr>
<tr>
<td>Creatinine</td>
<td>02/01/2007</td>
<td>0.9</td>
<td></td>
<td>more info</td>
</tr>
<tr>
<td>Microalbumin Ratio</td>
<td>02/06/2008</td>
<td>30</td>
<td></td>
<td>more info</td>
</tr>
</tbody>
</table>

**Current medications for management of your diabetes**
- GLIPITIDE 10 MG PO TABS Take 1 by mouth each morning 30 minutes before breakfast.
- LIPITOR 20 MG PO TABS one tablet daily.
- GLUCOPHAGE 850 MG PO TABS 1 TABLET TWICE DAILY WITH FOOD.
- LISINOPRIL 20 MG PO TABS Take 1 tablet daily (may be taken with or without food).
- ASPIRIN EC 81 MG PO TBEC Take 1 by mouth each day.

**Health Maintenance Schedules:**
- **Topic** | **Last Done** | **Next Due**
- DIABETIC EYE EXAM | Never | Now
- DIABETIC FOOT EXAM | Never | Now
- INFLUENZA VACCINE | 11/28/2007-Done | 10/01/2008
- GLYCOHEMOGLOBIN | 01/30/2008 | 04/30/2008
- LIPID SCREENING | 02/14/2008 | 02/14/2009
- MICROALBUMIN | 02/06/2008 | 02/06/2009

**Office Visits**

<table>
<thead>
<tr>
<th>Specialty</th>
<th>Last Visit</th>
<th>Next Scheduled Appt</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Endocrinology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cardiology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ophthalmology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Podiatry</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Please use the following recommendations to make sure that your diabetes care is up-to-date:

- Check at every Office Visit
  - Blood Pressure
  - Weight
- Check at least once a Year:
  - Cholesterol
  - Microalbumin
  - Foot Exam
  - Eye Exam
  - Flu Shot
  - Diabetes Education & Nutrition counseling
Providing Tools for Timely Feedback to Patients

Helping to ‘Connect the Dots’
Managing “Sugar”

Traditional Process

1. Acquire Reading
2. Record Data
3. Call Schedule Drive
4. Transport Diary
5. Office Visit
6. “Analyze” Data
7. Explain Plan

Change Behavior
Online Disease Management
Diabetes

Acquire Reading
Record Data
Call Schedule Drive
Transport Diary
Office Visit
“Analyze” Data
Explain Plan

Change Behavior

Time
Untethering Glucometer

Unleashing Patient Control

Acquire Reading

Wireless upload

RN/MD Feedback

Patient / Clinician Relationship

Patient Analyzes Data

Change Behavior
Providing Feedback
Feedback from Beta Group

Mar 20, 2008

• **Doing it for us:**
  – “Being in the [online disease management] program means people are interested in you.”
  – “Kelly was watching” “Knowing information will get to Kelly”

• **Learning from data:**
  – “Eating made a big difference in readings…”
  – “…also found out that what I eat affects the readings.”
  – “It makes denial more difficult.”

• **Doing it for themselves:**
  – “If I’m going to eat something, I think about what my reading will be, so I don’t eat it.”
  – “I’ve incorporated the tools into my daily life.”
EMPOWER-D

Engaging and Motivating Patients Online With Enhanced Resources - Diabetes

A randomized controlled clinical trial of a PHCP for patients with Diabetes
EMPOWER-D
A Randomized Controlled Clinical Trial

• Funded by the Agency for Healthcare Research and Quality

• 400 diabetic patients (200 intervention, 200 controls)

• Outcome measures:
  – HbA1c, BP, lipids, wt, microalbumin
  – Self-management behavior
  – Patient and provider satisfaction
  – Utilization
Summary
Connecting for Better Health

• *Personalized* health care key to sustained patient engagement
• Use PHR to create a continuous linkage with their professional health care team
• Put patients on the health care team
• EHRs *and PHRs* are essential technologies for bringing patients into the workforce
Personal Health Records and Elder Medication Use Quality

Elizabeth A. Chrischilles, PhD
Department of Epidemiology
The University of Iowa

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What is a Personal Health Record?

• **Personal Health Records** (“**PHRs**”) are electronic records of individually identifiable health information on an individual that can be drawn from multiple sources and that is managed, shared, and controlled by or for the individual.

• PHRs vary considerably in features, cost, and functionality.
Context

• Increasing older adult population
• Heavy use of healthcare system; multiple prescriptions, multiple providers
• Discrepancies between medication lists – health system records vs. patient self-report
• Up to 40% don’t take medications as prescribed\(^1\)
• 14-23% prescribed medications incorrectly\(^2\)-\(^4\)
• PHR use is on the rise nationally:\(^5\)
  – 2008  3%
  – 2010  10%
PHRs and older adults

PHRs may...

- Facilitate greater control, involvement over health
- Increase communication and support medication reconciliation
- Reduce mistakes by patients and providers
PHRs and older adults

But…

• Lack of computer literacy, access
• Cognitive, perceptual, motor declines
• Interface “goodness-of-fit”
• Data entry
• Lack of perceived benefit
• Limited feedback loops
  – E.g., physician involvement
Study Goals

1. Study usability of commercial PHRs among older adults
2. Participatory design of a PHR specifically for older adults
3. Test whether engagement in keeping a personal health record is associated with increased self-efficacy for medication therapy management, improved communication with providers, and improved medication quality
PHR usability

• Reviewed 58 PHRs listed in myphr.org (2008)
  – 54 were operational when we reviewed them
• Most geared towards young families
• Few provided easy to access online demonstrations
• We only found 12 out of 58 could be potentially used in our study
  – poorly designed forms
  – difficult navigation
  – complex user interfaces

Conclusion: The commercially available PHR we selected was not conducive to medication management activities.
PHR participatory design

- AHRQ health IT report
- Participatory design sessions with older adults in retirement community
  - 12 sessions over 3 weeks
  - Expressed interest in entering and keeping track of health information
- Focus groups with other older adults
- Human-computer interaction lab testing
The result? →

- Simple user interface and navigation
  - All patient-entered info; an “untethered” PHR
- Designed for lower literacy patient population
- Although the purpose of the grant is to examine whether the study PHR (“IowaPHR”) improves medication use, IowaPHR includes expanded functionality:
  - tracking health-related information (e.g. blood pressure, doctor visits)
  - recording health conditions and allergies
  - printing reports for sharing with healthcare providers
  - medication-specific “warnings”
Iowa PHR login screen
(www.iowaphr.org)
Welcome Back

Did you know:

A comprehensive medication review should be done at least once each year.

A person's need for medications changes over time. A yearly review of your medication list by a healthcare provider can stop unneeded medications and find out if new medications are needed. It can make sure the doses you take and the times you take them are still right for you.

What can you do?

• Use IowaPHR to print your current medication list and ask your pharmacist or doctor to review your medications.
• Ask your pharmacist or doctor to review your list at least once per year.
• Ask if there are medications that can be removed or changed.
• Ask if some medications should be added.

With the IowaPHR you can:

• Keep an up-to-date list of all your medications.
  ○ Record what each medication is supposed to do.
  ○ Get important warnings about the medications you are taking.

• Print reports to share with your healthcare providers, including:
  ○ A list of your current medications
  ○ Warnings for medications you are taking
  ○ A wallet-sized card

• Track your health, allergies and health conditions.

Please click play to view the tutorial video below.
### Instructions

As you begin to type a medication name, our system will recommend product names to help you with spelling. When you see the one you want, click on it to enter it in the field. It is possible that not every product is in our system. In that case, just keep typing, being careful to spell it as accurately as possible. You may see a safety warning about a medicine. Safety warnings are based on expert recommendations, however please note that using IowaPHR should not in any way replace advice given by your doctor, pharmacist, or any other medical professional. Also, different medications sometimes have very similar names, and a warning could be generated in error if a typing mistake is made.

[More Information]

### My Current Medication List

<table>
<thead>
<tr>
<th>Name of Medication or product</th>
<th>What Strength do you take?</th>
<th>How do you take it?</th>
<th>Why do you take it?</th>
</tr>
</thead>
<tbody>
<tr>
<td>adv</td>
<td>325mg</td>
<td>2 Tablets Every 8 Hours As Needed</td>
<td>Arthritis</td>
</tr>
<tr>
<td>advair...</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>advance...</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>advanced am/pm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>advanced formula di-gel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>advate ral-fpm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>advicor</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>advil cold and sinus liqui-gel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>advil multi-symptom cold</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

One a day with a full glass of water

- **high blood pressure**

- **tablet every 6 hours**

- **sprained ankle**

**Delete**

**Edit**

**Move to Previous Medication List**
Iowa PHR medication screen

Instructions
As you begin to type a medication name, our system will recommend product names to help you with spelling. When you see the one you want, click on it to enter it in the field. It is possible that not every product is in our system. In that case, just keep typing, being careful to spell it as accurately as possible. You may see a safety warning about a medicine. Safety warnings are based on expert recommendations, however please note that using IowaPHR should not in any way replace advice given by your doctor, pharmacist, or any other medical professional. Also, different medications sometimes have very similar names, and a warning could be generated in error if a typing mistake is made.

[More Information]

My Current Medication List

<table>
<thead>
<tr>
<th>Name of Medication or product</th>
<th>What Strength do you take?</th>
<th>How do you take it?</th>
<th>Why do you take it?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example: Tylenol</td>
<td>Example: 325mg</td>
<td>Example: 2 Tablets Every 8 Hours As Needed</td>
<td>Example: Arthritis</td>
</tr>
</tbody>
</table>

Your changes have been saved

See medication warning below

<table>
<thead>
<tr>
<th>Medication</th>
<th>Dosage</th>
<th>Frequency</th>
<th>Reason</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>warfarin</td>
<td>2 mg</td>
<td>once a day</td>
<td>had a heart attack</td>
<td>[Edit] [Delete] [Move to Previous Medication List]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Reduce your risk of serious bleeding side effects</strong></td>
<td></td>
</tr>
<tr>
<td>enalapril</td>
<td>5 mg</td>
<td>One a day with a full glass of water</td>
<td>high blood pressure</td>
<td>[Edit] [Delete] [Move to Previous Medication List]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Reduce your risk of kidney and heart side effects</strong></td>
<td></td>
</tr>
<tr>
<td>Advil</td>
<td>200 mg</td>
<td>1 tablet every 6 hours</td>
<td>sprained ankle</td>
<td>[Edit] [Delete] [Move to Previous Medication List]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Do you have risk factors for serious stomach bleeding?</strong></td>
<td></td>
</tr>
</tbody>
</table>
Medication warnings on home page

Welcome Back

Latest safety updates about your medications:

▶ warfarin - Reduce your risk of serious bleeding side effects

▶ enalapril - Reduce your risk of kidney and heart side effects

This product contains enalapril. It can cause low kidney function and high potassium. High potassium can cause heart problems.

- Talk to your doctor about getting a blood test to detect low kidney function and high potassium.

More about getting a blood test

▶ Advil - Do you have risk factors for serious stomach bleeding?

Please note that using IowaPHR should not in any way replace advice given by a doctor, pharmacist, or any other medical professional. Please talk to your doctor or pharmacist before starting, stopping, or changing how you take any medication. Different medications sometimes have very similar names, and a warning could be generated in error. To verify that your medication contains the drug listed in a warning, check the label or ask your pharmacist.
IowaPHR tracking health information
Trial recruitment (1)

• Simple random sample of registered voters in Iowa age 65+ (n=15,000)
• Mailed screening questionnaire to identify current computer users:
  – “In the past month, have you used a computer to visit web sites, or to send or receive email?”
• Sent baseline questionnaire and invitation to trial eligibles
• $10 payment for completing baseline questionnaire
Trial Recruitment (2)

Eligible for trial (n=2376)
- 645 (27%)
- 944 (40%)
- 417 (17%)
- 370 (16%)

Enrolled in trial (n=1163)
- 324 (28%)
- 464 (40%)
- 207 (18%)
- 168 (14%)

48.9% of eligible persons were enrolled in trial.
Study groups and measures

• Trial enrollees randomized (3:1):
  – “PHR group” or normal care/control group
    • PHR group: 873
    • Control: 290
    • Total 1163

• Measures
  – Baseline and 6 mo follow-up medication inventory, medication management behaviors, SF-12 v2, demographics
    • ACOVE-3 measures of medication use quality\(^7\)
  – Detailed log-tracking
  – Attitudes towards, experience with PHR use
“PHR group” user invitations

• Letter with username and password mailed to prospective user

• Quick start guide:

Questions about this study?
Please call us toll-free at: 866-520-8983

What is a Personal Health Record (PHR)?
A Personal Health Record (PHR) is a computer program that allows you to enter and store your health and medication information.

How do I use IowaPHR?

1. Go to a computer that is connected to the internet and visit www.iowaphr.org.

2. Type in your username and password that was provided in the enclosed letter, and click “Login.”

3. Now you’re ready to use IowaPHR.

You can enter as much or as little information in IowaPHR as you want. Also, you can update your IowaPHR account as often as you want.
Weekly and cumulative new logins

- **New Logins**
  - Weeks since go-live: 1-17
  - Weekly logins: 145, 85, 37, 92, 32, 20, 29, 18, 8, 3, 4

- **Cumulative Logins**
  - Weeks since go-live: 1-17
  - Cumulative logins: 1, 230, 267, 359, 391, 411, 440, 458, 466, 469, 473, 482, 496, 505, 507, 510, 510

- **Key Events**
  - Reminder letter mailed: 459
  - Notice sent describing roll-out of version 2.0: 496

- **Percentage**
  - 58.4% of all invitees logged in at least once
Non-, single-* and return-users
(n=873)
Average number of people logging in, by age and sex

<table>
<thead>
<tr>
<th></th>
<th>Total People</th>
<th>Total Logins*</th>
<th>Mean Person Logins*</th>
<th>Mean Daily Logins*</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>510</td>
<td>1303</td>
<td>2.6</td>
<td>11.0</td>
</tr>
<tr>
<td>Age group</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>65-69</td>
<td>198</td>
<td>491</td>
<td>2.5</td>
<td>4.2</td>
</tr>
<tr>
<td>70-74</td>
<td>143</td>
<td>391</td>
<td>2.7</td>
<td>3.3</td>
</tr>
<tr>
<td>75-79</td>
<td>107</td>
<td>289</td>
<td>2.7</td>
<td>2.5</td>
</tr>
<tr>
<td>80+</td>
<td>62</td>
<td>132</td>
<td>2.1</td>
<td>1.1</td>
</tr>
<tr>
<td>Sex</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>282</td>
<td>541</td>
<td>1.9</td>
<td>4.6</td>
</tr>
<tr>
<td>Male</td>
<td>228</td>
<td>762</td>
<td>3.3</td>
<td>6.5</td>
</tr>
</tbody>
</table>

*Includes max of one login per person per day; results reported for 17 weeks of PHR use
Average interval (in days) between logins*, among return users (n=274)

<table>
<thead>
<tr>
<th>Age group</th>
<th>Mean # of days (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>65-69</td>
<td>21.0 (29.2)</td>
</tr>
<tr>
<td>70-74</td>
<td>16.0 (24.4)</td>
</tr>
<tr>
<td>75-79</td>
<td>19.6 (25.5)</td>
</tr>
<tr>
<td>80+</td>
<td>29.8 (30.6)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sex</th>
<th>Mean # of days (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>31.2 (30.0)</td>
</tr>
<tr>
<td>Male</td>
<td>14.4 (24.1)</td>
</tr>
</tbody>
</table>

*Includes max of one login per person per day; results reported for 17 weeks of PHR use
Iowa PHR user-entered current medications

• 2310 current medications entered (among 325 users)
  – Mean (SD) 7.1 (4.4)
  – Mode 4.0

• 76.5% (n=1767) of current medications entered match reference list

<table>
<thead>
<tr>
<th>Number of current medications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quantile</td>
</tr>
<tr>
<td>25%</td>
</tr>
<tr>
<td>50%</td>
</tr>
<tr>
<td>75%</td>
</tr>
<tr>
<td>90%</td>
</tr>
<tr>
<td>100%</td>
</tr>
</tbody>
</table>
# Medication warnings

<table>
<thead>
<tr>
<th>Warning</th>
<th>Count</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSAIDs</td>
<td>209</td>
<td>45.7</td>
</tr>
<tr>
<td>ACE Inhibitors</td>
<td>93</td>
<td>20.4</td>
</tr>
<tr>
<td>Acetaminophen</td>
<td>46</td>
<td>10.0</td>
</tr>
<tr>
<td>Anticholinergics</td>
<td>32</td>
<td>7.0</td>
</tr>
<tr>
<td>Warfarin</td>
<td>24</td>
<td>5.3</td>
</tr>
<tr>
<td>Loop diuretics</td>
<td>22</td>
<td>4.8</td>
</tr>
<tr>
<td>Benzodiazepines</td>
<td>16</td>
<td>3.5</td>
</tr>
<tr>
<td>Iron</td>
<td>8</td>
<td>1.8</td>
</tr>
<tr>
<td>Skeletal muscle relaxants</td>
<td>5</td>
<td>1.1</td>
</tr>
<tr>
<td>Barbiturates</td>
<td>1</td>
<td>0.2</td>
</tr>
<tr>
<td>Ketorolac</td>
<td>1</td>
<td>0.2</td>
</tr>
<tr>
<td><strong>Total warnings</strong></td>
<td><strong>457</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Total medications with at least one warning = \( \frac{448}{2310} = 19.4\% \) of entered meds have \( \geq 1 \) warning.
Iowa PHR user-entered health conditions

• 490 conditions entered (among 161 users)
  – Mean (SD) 3.0 (2.3)
  – Mode 1.0

• 38.8% (n=190) of entered conditions match reference list

<table>
<thead>
<tr>
<th>Number of conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Quantile</strong></td>
</tr>
<tr>
<td>25%</td>
</tr>
<tr>
<td>50%</td>
</tr>
<tr>
<td>75%</td>
</tr>
<tr>
<td>90%</td>
</tr>
<tr>
<td>100%</td>
</tr>
</tbody>
</table>
Main feature visits, among ever-users (n=510)

<table>
<thead>
<tr>
<th>PHR function/tab</th>
<th>Number of users</th>
<th>Total visits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tutorial Video</td>
<td>386 (75.7)</td>
<td>627</td>
</tr>
<tr>
<td>Current Medication List</td>
<td>374 (73.3)</td>
<td>1110</td>
</tr>
<tr>
<td>Previous Medication List</td>
<td>109 (21.4)</td>
<td>219</td>
</tr>
<tr>
<td>Print Reports</td>
<td>207 (40.6)</td>
<td>420</td>
</tr>
<tr>
<td>Tracking</td>
<td>273 (53.5)</td>
<td>1014</td>
</tr>
<tr>
<td>Blood Pressure</td>
<td>120 (23.5)</td>
<td>343</td>
</tr>
<tr>
<td>Blood Sugar</td>
<td>77 (15.1)</td>
<td>197</td>
</tr>
<tr>
<td>Exercise</td>
<td>104 (20.4)</td>
<td>423</td>
</tr>
<tr>
<td>Cholesterol</td>
<td>76 (14.9)</td>
<td>131</td>
</tr>
<tr>
<td>Health Care Visits</td>
<td>104 (20.4)</td>
<td>250</td>
</tr>
<tr>
<td>Weight</td>
<td>111 (21.8)</td>
<td>273</td>
</tr>
<tr>
<td>Personal</td>
<td>88 (17.3)</td>
<td>192</td>
</tr>
<tr>
<td>Allergies</td>
<td>255 (50.0)</td>
<td>433</td>
</tr>
<tr>
<td>Health Conditions</td>
<td>309 (60.6)</td>
<td>2133</td>
</tr>
<tr>
<td>About Me</td>
<td>324 (63.5)</td>
<td>646</td>
</tr>
<tr>
<td>Emergency Contact</td>
<td>206 (40.4)</td>
<td>262</td>
</tr>
<tr>
<td>Warning from Med List Tab</td>
<td>67 (13.1)</td>
<td>117</td>
</tr>
<tr>
<td>Warning from Home Page Tab</td>
<td>42 (8.2)</td>
<td>94</td>
</tr>
</tbody>
</table>
Reports printed by users, among ever-users (n=510)

<table>
<thead>
<tr>
<th>Report</th>
<th>Number of users</th>
<th>Total visits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Medication list</td>
<td>219 (42.9)</td>
<td>574</td>
</tr>
<tr>
<td>Previous Medication List</td>
<td>36 (7.1)</td>
<td>52</td>
</tr>
<tr>
<td>Medication Warnings</td>
<td>24 (4.7)</td>
<td>34</td>
</tr>
<tr>
<td>Wallet Sized Card</td>
<td>208 (40.8)</td>
<td>453</td>
</tr>
<tr>
<td>Blood Pressure</td>
<td>21 (4.1)</td>
<td>36</td>
</tr>
<tr>
<td>Blood Sugar</td>
<td>3 (0.6)</td>
<td>8</td>
</tr>
<tr>
<td>Exercise</td>
<td>5 (1.0)</td>
<td>19</td>
</tr>
<tr>
<td>Cholesterol</td>
<td>7 (1.4)</td>
<td>7</td>
</tr>
<tr>
<td>Health Care Visits</td>
<td>10 (2.0)</td>
<td>19</td>
</tr>
</tbody>
</table>
Conclusion

• Older adults will use an internet-based PHR
• Many will continue to use it
• Preliminary evidence suggests good quality medication data can be collected
• Possible source for collecting diverse patient-reported outcomes
• Stay tuned to see if this has an effect on:
  – Keeping an up-to-date medication list
  – Sharing the list during healthcare visits
  – Discussing medications during healthcare visits
  – Quality indicators
Study Team

Faculty and Staff
• Betsy Chrischilles (PI)
• Jeanette Daly
• Bill Doucette
• David Eichmann
• Karen Farris
• Brian Gryzlak
• Juan Pablo Hourcade
• Elena Letuchy
• Barcey Levy
• Ryan Lorentzen
• Mike Mueller
• Nick Rudzianski
• Kara Wright

Students
• Dana Bakhit
• Don Dunbar
• Amber Goedken
• Blake Hanson
• Kate Jett
• Zainab Khan
• Sandeep Kumar
• Cassie Spracklen
Selected References


Thank you!
An Electronic Personal Health Record for Mental Health Consumers

Silke von Esenwein, PhD

I do not have any relevant financial relationships with any commercial interests to disclose.

Funded by AHRQ R18HS017829
PHRs in Community Mental Health

• Persons with SMI commonly have multiple comorbid conditions
• Care is typically scattered across multiple providers
• Information technology for CMHCs lags behind other public sector health providers.
PHRs, Quality and Outcomes

• PHRs might be able to improve care via improved patient activation and/or improved provider coordination

• However, almost no research exists on using PHRs to improve care in either the medical or mental health literature
Randomized Trial

• Randomized trial of PHR vs. Usual Care for patients with one or more chronic medical condition (n=170)

• Main Outcomes: Patient activation, quality of medical care.
  – Other outcomes: Health service use including ER use; recovery; medication adherence; HRQOL
Adapting the Shared Care Plan

• Collaborated with Shared Care developers, MH consumer leaders
• Focus groups with consumers, MH and medical providers
  – Enormous excitement from consumers
  – Providers: some initial concerns about TMI, trustworthiness of information
• Modifications based on focus groups
Implementing the PHR

• RN Clinical specialist helps patients enter data, set and achieve goals.
• Patient activation is used as a tool to drive care.
• Computer training classes
Privacy and Sharing

- Explain to consumers how they might manage access to their PHR data most effectively, especially how they might set varied security settings
Lessons Learned

• Consumers: computer training has proved critical in engaging consumers in the project. Nursing student provides each client with training.

• Providers: Primary care providers have found the records enormously helpful.
Looking Ahead

• PHRs may be important tool not only for improving care but for consumer empowerment

• In the future, it will be possible to directly integrate community-based PHRs with lab data, pharmacy data and multiple EHRs

• Works best when incorporated into the work flow
Questions & Answers

Our Panel:

Paul C. Tang, M.D., M.S., is an Internist and Vice President, Chief Innovation and Technology Officer at the Palo Alto Medical Foundation (PAMF), is Consulting Associate Professor of Medicine at Stanford University and directs the David Druker Center for Health Systems Innovation.

Elizabeth A. Chrischilles, Ph.D., is a professor in the Department of Epidemiology, holds the Marvin A. and Rose Lee Pomerantz Chair in Public Health in the University of Iowa College of Public Health.

Silke von Esenwein, Ph.D., is an assistant research professor at the Rollins School of Public Health at Emory University in addition to working closely with the Carter Center Mental Health Program and the Jane Fonda Center
Coming Soon!

Our next event

A webinar examining health information technology and improved decision making.

Stay tuned for exact date, time and registration information
Thank You for Attending

This event was brought to you by the AHRQ National Resource Center for Health IT

The AHRQ National Resource Center for Health IT promotes best practices in the adoption and implementation of health IT through a robust online knowledge library, Web conferences, toolkits, as well as AHRQ-funded research outcomes.

A recording of this Web conference will be available on the AHRQ National Resource Center Web site within two weeks.

http://healthit.ahrq.gov
### Trial Recruitment (2)

48.9% of eligible persons were enrolled in trial

Eligible for Trial (n=2376)

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>65-69</td>
<td>370</td>
<td>16%</td>
</tr>
<tr>
<td>70-74</td>
<td>944</td>
<td>40%</td>
</tr>
<tr>
<td>75-79</td>
<td>645</td>
<td>27%</td>
</tr>
<tr>
<td>80+</td>
<td>417</td>
<td>17%</td>
</tr>
</tbody>
</table>

Enrolled in trial (n=1163)

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>65-69</td>
<td>168</td>
<td>14%</td>
</tr>
<tr>
<td>70-74</td>
<td>464</td>
<td>40%</td>
</tr>
<tr>
<td>75-79</td>
<td>324</td>
<td>28%</td>
</tr>
<tr>
<td>80+</td>
<td>207</td>
<td>18%</td>
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</table>
**Weekly and Cumulative new logins**

58.4% of all invitees logged in at least once

<table>
<thead>
<tr>
<th>Weeks since Go-Live</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
<th>17</th>
</tr>
</thead>
<tbody>
<tr>
<td>New logins</td>
<td>145</td>
<td>85</td>
<td>37</td>
<td>92</td>
<td>32</td>
<td>20</td>
<td>29</td>
<td>18</td>
<td>8</td>
<td>3</td>
<td>4</td>
<td>9</td>
<td>14</td>
<td>9</td>
<td>2</td>
<td>3</td>
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</tr>
<tr>
<td>Cumulative logins</td>
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<td>230</td>
<td>267</td>
<td>359</td>
<td>391</td>
<td>411</td>
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<td>469</td>
<td>473</td>
<td>482</td>
<td>496</td>
<td>505</td>
<td>507</td>
<td>510</td>
<td>510</td>
</tr>
</tbody>
</table>

**Notes:**

- Reminder letter for Cumulative logins mailed between weeks 3 and 4
- Notice sent describing roll-out of version 2.0 between weeks 12 and 13